R. S. MERCER.

MACHINE FOR FILLING PILL BOXES WITH A REGULAR QUANTITY OF PILLS.

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1,400,304. Patented Dec. 13, 1921.

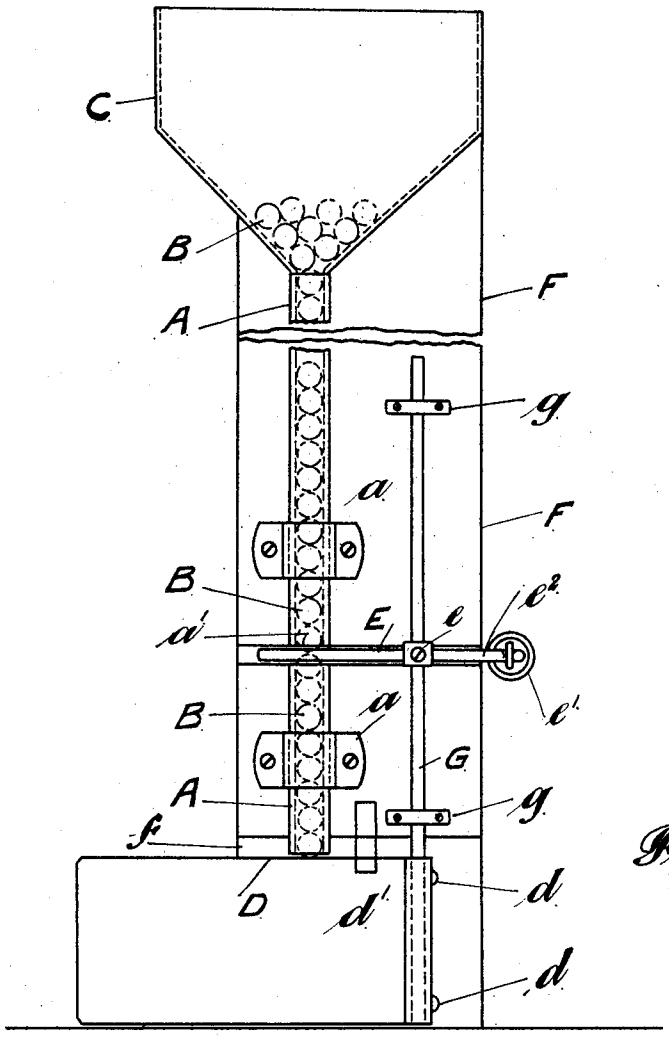


Fig. 1.

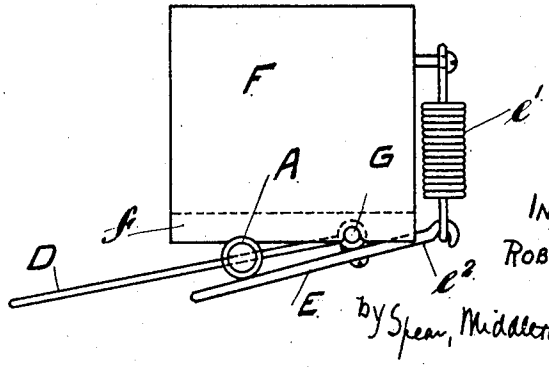


Fig. 2.

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UNITED STATES PATENT OFFICE.

ROBERT SYDNEY MERCER, OF BLACKBURN, ENGLAND.

MACHINE FOR FILLING PILL-BOXES WITH A REGULAR QUANTITY OF PILLS.

1,400,304. Specification of Letters Patent. Patented Dec. 13, 1921.

Application filed August 27, 1920. Serial No. 406,471.

To all whom it may concern:

Be it known that I, ROBERT SYDNEY MERCER, a subject of the King of Great Britain, and resident of Blackburn, in the county of Lancaster, England, have invented certain new and useful Improvements in Machines for Filling Pill-Boxes with a Regular Quantity of Pills, of which the following is a specification.

This invention relates to apparatus for delivering regular quantities of articles that are practically uniform in shape and size and is primarily intended for filling pill boxes, or other receptacles with pills or other like articles, in measured numbers.

The apparatus comprises a tube having an internal bore slightly larger than the article, hereinafter referred to as pill, that it is intended to deliver. This tube is connected at its upper end with a hopper which keeps the tube filled with pills and its lower end is normally closed by a cut-off which operates in conjunction with a second cut-off situated at some intermediate portion of the tube, the arrangement being such that when the lower cut-off is displaced to open the lower end of the tube and allow the measured quantity of pills to fall, the upper cut-off is actuated to prevent the pills situated above the measured quantity from falling. When the lower cut-off is released a spring returns it to its closed position and simultaneously actuates the upper cut off to allow the pills in the tube to fall until the latter is again full. The lower cut-off may be actuated by pressing an open pill box or other receptacle against it so that the pills will fall directly into the box as the cut-off is opened.

In the accompanying drawings:—

Figure 1 is an elevation and Fig. 2 a plan of a form of apparatus constructed in accordance with the invention.

A indicates the tube, B the pills, C the hopper, D the lower cut-off and E the upper cut-off.

In the example shown the tube A which may be constructed of glass, or other suitable material is attached by clips a to an upright frame F and such tube is made in two portions separated from one another by a slight space a^1 the lower portion being sufficiently long to contain the measured number of pills, (eight in the example shown). The lower cut-off D comprises a plate G which is clamped by screws g to a rod that is rotatably mounted in bearings attached to the frame F. The cut-off D is free to move within limits which are regulated by a stop d and a portion f of the frame F. When the cut-off is bearing against the stop d it is crossing the end of the tube A and when moved into the portion f it leaves the end of the tube clear. The upper cut-off E comprises a resilient arm that is clamped to the rod g^1 by a screw e and occupies a position at the point of separation of the two portions of the tube. This arm is normally retained away from the tube by a spring e^1 acting on an arm e^2 and such spring normally holds the cut-off D in a position to cross the lower end of the tube. In this position the tube is full of pills provided that the hopper C has been previously supplied. When a pill box is placed opposite the tube A and pressed against the cut-off D it displaces the latter and occupies a position underneath the tube. Simultaneously with this operation the arm E is moved toward the tube until it presses aginst the pill that happens to lie in the space a^1 and holds such pill, the pills below it falling into the pill box. Immediately the latter is removed the spring e^1 returns the parts to their normal positions with the result that the pills previously held up by the upper cut-off, fall and the tube A again becomes filled, ready for the next measuring operation. If it is desired to vary the number of pills measured, a longer or shorter tube portion may be substituted for the one previously in use and the positions of the cut-offs be regulated accordingly. If a single standard measure is required, the tube A may be constructed in one piece and have a slot at one side to receive the arm E. Instead of a resilient arm gripping a pill, a rigid arm may pass between two pills to perform the holding operation.

What I claim as my invention and desire to secure by Letters Patent is:—

1. Apparatus for delivering regular quantities of articles, comprising a tube having an upper portion and a lower portion separated from one another by a small space, a receptacle for supplying such portions with the articles, a frame for carrying the tube and receptacle, a rod rotatably mounted in bearings on such frame, an upper cut-off comprising an arm fixed on the rod and adapted to be interposed between the two portions of the tube, a lower cut-off com-

prising a plate fixed on the rod and arranged to be moved across the lower end of the tube, means for limiting the movement of the plate in either direction and a spring for normally causing the plate to lie across the lower end of the tube and the upper arm to lie away from the tube.

2. Apparatus for delivering regular quantities of articles, comprising a tube having an upper portion and a lower interchangeable portion separated from one another by a small space, a receptacle for supplying such portions with the articles, a frame for carrying the tube and receptacle, a rod rotatably mounted in bearings on such frame, an upper cut-off comprising a resilient arm adjustably mounted on the rod and adapted to be interposed between the two portions of the tube, a lower cut-off comprising a plate adjustably mounted on the rod and arranged to move across the lower end of the tube, means for limiting the movement of the plate in either direction and a spring for normally causing the plate to lie across the lower end of the tube and the upper arm to lie away from the tube.

In testimony whereof I affix my signature.

ROBERT SYDNEY MERCER.

Witnesses:
JOHN HAYHURST,
WILLIAM WIGNALL.